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Atty Dkt No. 1950-0024  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Jesse L. BEAUCHAMP et al.

Confirmation No.: 3556

Serial No.: 10/782,373

Group Art Unit: 1621

Filing Date: February 18, 2004

Examiner: Unassigned

Title: CHEMICAL REAGENTS CAPABLE OF SELECTIVE ATTACHMENT TO AND REACTION WITH PEPTIDES AND PROTEINS

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an Information Disclosure Statement submitted for the Examiner's consideration.

Applicants respectfully request that the Examiner review and make of record the references identified below.

A PTO-1449 form listing the references accompanies this paper. Applicants would appreciate the Examiner's initialing and returning the form to indicate that the references have been reviewed and made of record. The references are as follows:

NONPATENT DOCUMENTS
BELL et al. (1999), "A Small-Molecule Guanidinium Receptor: The Arginine Cork," <i>Angew. Chem. Int. Ed.</i> <u>38</u> (17):2543-2547.
BRADSHAW et al. (1996), "Crown Ethers," <i>Comprehensive Supramolecular Chemistry</i> <u>1</u> :35-95, G.W. Gokel (Ed.) Pergamon/Elsevier, Oxford.
CHANDLER et al. (1981), "Synthesis of Some 2,9-Disubstituted-1, 10-Phenanthrolines," <i>J. Heterocycl. Chem.</i> <u>18</u> :599-601.
FRIESS et al. (2001), "Protein Structure Information from Mass Spectrometry? Selective Titration of Arginine Residues by Sulfonates," <i>J. Am. Soc. Mass Spectrom.</i> <u>12</u> :810-818.
GALÁN et al. (1992), "A Receptor for the Enantioselective Recognition of Phenylalanine and Tryptophan Under Neutral Conditions," <i>J. Am. Chem. Soc.</i> <u>114</u> :1511-1512.
HU et al. (1995), "Gas-Phase Coordination Properties of Zn <sup>2+</sup> , Cu <sup>2+</sup> , Ni <sup>2+</sup> , and Co <sup>2+</sup> with Histidine-Containing Peptides," <i>J. Am. Chem. Soc.</i> <u>117</u> (45):11314-11319.
JULIAN et al. (2001), "Site Specific Sequestering and Stabilization of Charge in Peptides by Supramolecular Adduct Formation with 18-Crown-6 Ether by Way of Electrospray Ionization," <i>Int. J. Mass Spectrom.</i> <u>210</u> /211:613-623.

NONPATENT DOCUMENTS
JULIAN et al. (2002), "Molecular Recognition of Arginine in Small Peptides by Supramolecular Complexation with Dibenzo-30-crown-10 Ether," <i>Int. J. Mass Spectrom.</i> 220:87-96.
JULIAN et al. (2002), "The Unusually High Proton Affinity of Aza-18-crown-6 Ether: Implications for the Molecular Recognition of Lysine in Peptides by Lariat Crown Ethers," <i>J. Am. Soc. Mass Spectrom.</i> 13:493-498.
JULIAN et al. (2003), "Molecular Mousetraps: Gas-Phase Studies of the Covalent Coupling of Noncovalent Complexes Initiated by Reactive Carbenes Formed by Controlled Activation of Diazo Precursors," <i>Angew. Chem. Int. Ed.</i> 42(9):1012-1015.
LEE et al. (1998), "Salt Bridge Chemistry Applied to Gas-Phase Peptide Sequencing: Selective Fragmentation of Sodiated Gas-Phase Peptide Ions Adjacent to Aspartic Acid Residues," <i>J. Am. Chem. Soc.</i> 120(13):3188-3195.
LEE et al. (1998), "Selective Binding of Crown Ethers to Protonated Peptides Can Be Used to Probe Mechanisms of H/D Exchange and Collision-Induced Dissociation Reactions in the Gas Phase," <i>J. Am. Chem. Soc.</i> 120(23):5800-5805.
LIN et al. (1998), "C-Terminal Peptide Sequencing via Multistage Mass Spectrometry," <i>Anal. Chem.</i> 70(24):5162-5165.
LUDWIG (2000), "Calixarenes in Analytical and Separation Chemistry," <i>Fresenius J. Anal. Chem.</i> 367:103-128.
MALEKNIA et al. (1993), "Cavity-Size-Dependent Dissociation of Crown Ether/Ammonium Ion Complexes in the Gas Phase," <i>J. Am. Chem. Soc.</i> 115(7):2837-2843.
NEMIROVSKIY et al. (1998), "Gas Phase Studies of the Interactions of Fe <sup>2+</sup> with Cysteine-Containing Peptides," <i>J. Am. Soc. Mass Spectrom.</i> 9:1285-1292.
NGOLA et al. (1999), "A Selective Receptor for Arginine Derivatives in Aqueous Media. Energetic Consequences of Salt Bridges That Are Highly Exposed to Water," <i>J. Am. Chem. Soc.</i> 121(6):1192-1201.
RENSING et al. (2001), "Optimization of a Synthetic Arginine Receptor. Systematic Tuning of Noncovalent Interactions," <i>J. Org. Chem.</i> 66(17):5814-5821.
SCHRADER (1998), "Strong Binding of Arylguanidinium Ions by Benzylic Bisphosphonates – Evidence for π-cation and π,π-interactions," <i>Tetrahedron Letters</i> 39:517-520.
STEEN et al. (2002), "Analysis of Protein-Nucleic Acid Interactions by Photochemical Cross-Linking and Mass Spectrometry," <i>Mass Spectrom. Rev.</i> 21:163-182.
TSAPRAILIS et al. (1999), "Influence of Secondary Structure on the Fragmentation of Protonated Peptides," <i>J. Am. Chem. Soc.</i> 121(22):5142-5154.
TSAPRAILIS et al. (2000), "Refining the Model for Selective Cleavage at Acidic Residues in Arginine-Containing Protonated Peptides," <i>Int. J. Mass Spectrom.</i> 195/196:467-479.
WEIJNEN et al. (1992), "Functionalised 1,10-Phenanthroline Metalloenzymes as Models for Hydrolytic Metalloenzymes," <i>J. Chem. Soc. Perkin Trans. 2</i> :829-834.

This Information Disclosure Statement is not intended as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any of the above references constitutes prior art to the present application within the meaning of 35 USC § 102.

As applicants have not yet received a first Action on the merits, no fee is required for filing this Information Disclosure Statement. If, however, the PTO finds that for some reason a fee is found to be necessary, our Deposit Account No. 18-0580 may be charged therefor.

Respectfully submitted,

By: Shelley P. Eberle  
Shelley P. Eberle  
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
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Sheet

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*Complete if Known*

Application Number	10/782,373
Filing Date	February 28, 2004
First Named Inventor	Jesse L. BEAUCHAMP
Art Unit	1621
Examiner Name	Unassigned

Attorney Docket Number 1950-0024

**OTHER DOCUMENTS — NONPATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), Title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
	AA	BELL et al. (1999), "A Small-Molecule Guanidinium Receptor: The Arginine Cork," <i>Angew. Chem. Int. Ed.</i> <u>38</u> (17):2543-2547.	
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Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Sheet

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<b>First Named Inventor</b>	Jesse L. BEAUCHAMP
<b>Art Unit</b>	1621
<b>Examiner Name</b>	Unassigned
<b>Attorney Docket Number</b>	1950-0024

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